account. A series of sections was made of the hand and forearm and the connective tissue picked out. Injections were employed to determine the manner and paths of extension along the connective-tissue spaces under varying pressures. Pertinent clinical observations together with the experiments led to the following conclusions:

Extension of the pus from the fingers occurred through the canal for the lumbricalis muscle, to the cavity of the hand and back along the lumbricales, avoiding the tendon sheaths. This was observed clinically and experimentally. Pressure on the hand forced pus in the central connective-tissue space of the hand to the level of the metacarpophalangeal joints, through the lumbrical canals. Extension between the metacarpal bones seldom occurred. Pus passing under the anterior annular ligament to the forearm will be found almost always under the deep flexors of the fingers. In the middle of the arm the pus will almost always be found to be more superficial, lying between the muscles in the neighborhood of the median and ulnar nerve as well as the ulnar artery. It then extends distalward along the course of the ulnar artery, which accounts for the occasional occurrence of secondary hemorrhage.

Palmar abscesses should be evacuated in the course of the lumbrical canals, every infected canal being opened. When the pus originates in the fingers it can be found in the layer over the tendon sheaths of the palm. In protracted cases a large collection will be found in the space under the tendons. In the first group of cases, a simple incision will be sufficient; in the second group a closed forceps may be pushed between the tendons at the upper end of a communicating canal and then the blades opened. If the tendons are not necrotic or the tendon sheaths involved, this procedure will be followed by quick healing. If the thenar space alone is involved, the same method may be employed, passing the forceps from the radial side of the hand. If the central space of the hand is also involved, the forceps should be pushed laterally across and through to the ulnar side. A rubber drainage tube may be left in for a few hours. Rapid healing, with complete cure and return of function, usually results. If the forearm has been invaded the palmar incision may be extended upward through the anterior annular ligament. In a greater number of cases a better result was obtained by lateral incisions in front of the ulna and radius about 3 or 4 cm. above the wrist-joint. The forceps is then pushed across the forearm on the flexor side. The nerves and bloodvessels will be avoided if the forceps is kept close to the bones.

Concerning Ligature of the Common Carotid. A New Method of Ascertaining the Possible Disturbances of the Circulation.—JORDAN (*Arch. f. Chir.*, 1907, lxxxiii, 23) says that in 25 per cent. of the cases reported by Pilz, Zimmermann, and Krankepuhl, brain disturbances occurred and 10 per cent. died. Since we cannot ascertain how abundant are the collateral vessels, nor their capacity for dilatation, it is always difficult to determine the prognosis of a ligature of this vessel. To overcome this difficulty Jordan recommends a method which he has tried, successfully, on animals and in one case on man, *i. e.*, the previous, temporary, not firm ligature of the carotid for forty-eight hours. Since the brain symptoms dependent upon a lack of nourishment to the brain occur immediately after the operation, at the end of the first or in the course of the second twenty-four hours; if no trouble from the ligature occurs during this time it is unlikely that there will be any grave consequence from occlusion of the carotid. Experiments on lower animals showed that the ligature did no damage to the intima. Senger, in 1895, employed the temporary ligature for the bloodless extirpation of a tumor of the thigh. The operation should be done under local anesthesia, in order that the effect on the brain may be observed, and the ligature withdrawn on the first appearance of any distinct symptoms. The ligature material may be a small linen band, a rubber band, catgut, or a forceps with its blades guarded with rubber covering. The chief point is to apply the constriction very carefully, until the temporal pulse disappears. A further indication for this procedure is to be found in the suture of arteries.

The Technique of Direct Transfusion of Blood.—CRILE (*Annals of Surgery*, 1907, xlvi, 329) bases his remarks on 225 experiments upon animals and 32 clinical cases. The blood was transferred from the artery of the donor to the vein of the recipient. In the clinical transfusions the radial artery of the donor and the proximal end of any superficial vein of the arm of the recipient were employed. Unless contra-indicated, both patients are given a hypodermic injection of morphine twenty minutes before the transfusion begins. The donor is placed on a Trendelenburg table, so that if he should become faint the head may be readily lowered. The recipient is placed upon an operating table with his head in the opposite direction. Infiltration anesthesia of 0.1 per cent. cocaine solution is employed, and the radial artery is exposed. A Crile clamp is applied to the proximal end of the artery and the distal end is ligated; the artery is divided; the adventitia pulled over the free end as far as possible and closely snipped off; a moist sponge now covers this field; 3 or 4 cm. of a superficial vein of the recipient is then likewise freed; the distal part ligated, the proximal closed with a Crile clamp; the distal part is divided with scissors, the adventitia drawn out as far as possible and closely snipped off; the vessels are then inspected and a cannula whose bore is larger than the actual tissue thickness of either vein or artery is selected. The vein may then be pushed through this tube, after which the freed end is turned back like a cuff and snugly tied in the second groove. The artery is then drawn over the vein and tied in the first groove with a small linen ligature. This completes the anastomosis. The clamp is then removed from the vein; afterward, gradually, from the artery; when the blood stream will be seen to pass from the artery across to the vein, dilating the latter. By this method intima comes in contact with intima, the blood is transferred without clotting. The blood lost by the donor is regained in from four to five days, and the amount transferred is under the immediate control of the operator. The rate of transference should be carefully gauged, because of the risk of overcharging the pulmonary circulation.

Ligation of the Ductus Arteriosus.—MUNRO (*Annals of Surgery*, 1907, xlvi, 335) reports a case of a healthy girl baby, that soon after birth exhibited symptoms of some cardiac lesion, out of keeping with the general appearance of perfect health and development. On severe